

USSR

BAROYAN, O. V., krasnaya Zvezda, 2 Feb 73, p 4

transmitted to neighboring countries."

The situation with cholera again demonstrated what enormous significance the national nature of public health has in controlling infections.

Science is still in no position to eliminate all the natural centers of epidemics. It is difficult to exclude even individual cases of diseases, for example, scarlatina, poliomyelitis, and chicken pox. In addition, even today there are infections against which no reliable means have been found. Influenza, hepatitis and diphtheria -- they do not pose a fatal threat to man, but they are responsible for thousands of cases of disease every year. This forces the sanitary epidemic service always to be ready for battle.

Today the Soviet service for controlling infections combines 4,500 stations and divisions. In the near future another 300 will be built. Eighteen of them will become bases of sorts for departments of hygiene and scientific research institutes. The large stations will now be merged into centers equipped with modern facilities. The work of the doctors (there are 15,500 epidemiologists, infectious diseases specialists and bacteriologists in the country) will be facilitated by computers -- they will assume the laborious task of processing the epidemiological analysis data. This will permit precise and, mainly, fast evaluation of the situation not only in remote areas but throughout the country as a whole.

2/2

USSR

UDC: 911.3.616.831-002

BAROYAN, O. V., MEDVEDEVA, G. I., SHATKIN, A. A., PICHUSHKOV, A. V., BESKINA, S. R.,
ARUTYUNOVA, I. A., MARTYNOVA, V. R.

"Immunological-Epidemiological Research on Tick-Borne Encephalitis"

V sb. Materialy XV Vses. s'ezda epidemiologov, mikrobiologov i infektsionov,
tezisy dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiolo-
gists, Microbiologists and Specialists in Infectious Disease, Thesis Reports
Part I -- collection of works) Moscow, 1970, pp 186-187 (from RZh-36. Meditsin-
skaya geografiya, No 1, Jan 71, Abstract No 1.36.86)

/No abstract/

1/1

1/2 029 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PROBLEMS IN GENERAL AND SPECIAL IMMUNOLOGY -U-
AUTHOR--BAROYAN, O.V. *B*
COUNTRY OF INFO--USSR
SOURCE--VESTNIK AKADEMII MEDITSINSKIKH NAUK SSSR, VOL 25, NO 7, 1970 PAGES
3-9
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--IMMUNOLOGY, BIOSYNTHESIS, ANTIGEN, GENETICS, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3008/0754

STEP NO--UR/0248/70/025/007/0003/0009

CIRC ACCESSION NO--AP0137811

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137811

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MODERN IMMUNOLOGY, IN ADDITION TO CLASSICAL INFECTIOUS IMMUNOLOGY DEALS WITH PROBLEMS OF BIOCHEMISTRY, GENETICS, EMBRYOLOGY, ANTHROPOLOGY, PATHOLOGY, AND NOW SURGERY AS WELL, SINCE THE PROBLEM OF TISSULAR INCOMPATIBILITY UPON WHICH DEPENDS THE SUCCESS OF ORGAN AND TISSUE TRANSPLANTS, IS ENTIRELY WITHIN THE COMPETENCE OF IMMUNOLOGY. WE CAN POINT TO TWO REASONS FOR EXPANDED USE OF IMMUNOLOGICAL TECHNIQUES. FIRST, IMMUNOLOGICAL METHODS ARE NEEDED BY THE SCIENCES DEALING WITH BIOSYNTHESIS, FUNCTION AND ACTIVITY OF HIGH MOLECULAR SUBSTANCES SUCH AS ANTIGENS, PROTEINS AND POLYSACCHARIDES. SECONDLY, THE USE OF IMMUNOLOGICAL APPROACHES IS NEEDED TO DETERMINE THE BASIC PROBLEMS IN METABOLISM AND GENETICS OF THE CELL. FACILITY: INSTITUTE OF EPIDEMIOLOGY AND MICROBIOLOGY IMENI N. F. GAMALEYA, USSR ACADEMY OF MEDICAL SCIENCES, MOSCOW.

UNCLASSIFIED

USSR

UDC: 621.385.623

GULGAZARYAN, K. A. and BAROYAN, Yu. N., K. Marx Institute, Yerevan

"Light Sensor with a High-Q Resonator"

Yerevan, Izvestiya Akademii nauk armyanskoy SSR--Seriya tekhnicheskikh nauk, vol 25, No 4, 1972, pp 25-31

Abstract: Although the most sensitive light sensors are those equipped with a photomultiplier, the introduction of the photomultiplier into the device has the effect of reducing the Q of the resonator due to the resistance of the semitransparent photocathode. This article proposes and considers a method for increasing the resonator Q for a sensor with a photomultiplier, and discusses some practical applications of such a device. Through an analysis of the basic factor reducing the Q, the authors find that the resonator Q with a photomultiplier can be improved by reducing the coupling between the two devices. This is done by increasing the distance between the resonator's inner rod and the photocathode. An analysis of this arrangement is made through its equivalent circuit, and its application to the design of optical range finders is demonstrated.

1/1

USSR

UDC 51:621.391

PROTOPOPOV, O. G., PAKIN, Yu. P., BARSAGAYEVA, S. V.

"Use of a Group Code for Detection and Correction of Errors During Transmission of Messages"

Vopr. Razrab. I Vendrenaya Sredstv. Vychisl. Tekhn., [Problems of Development and Introduction of Computer Equipment--Collection of Works], Tbilisi, 1970, pp 88-93, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V479 by Yu. Pyatoshin).

Translation: Formulas are concluded for estimation of the effectiveness of certain correcting codes in the case of transmission of information with interrogation through a channel without memory using a code for correction and detection of the error.

1/1

28

A A0043472 -

Yu. G. Basargin

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/1

241057 MAGNETIC SYSTEM FOR A BROAD-BAND BETA

SPECTROGRAPH provides for vertical as well as horizontal focussing, so maintaining high transmission power. Second order aberration is also compensated in the median plane. The diagram shows the trajectory of the particles in the magnetic field after leaving the point source O. This is divided into three zones: I - the arc OP; II - the arc PL, with a different (smaller) radius; and III - the straight line LN. The horizontal focussing results in concentration at N. For vertical focussing, the same result is obtained by making the pole pieces with stepped air gaps, so that the plane-parallel gap in Zone I is wider than that in Zone II (see lower diagram). The geometrical dimensions are

1/3

21

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shown. If the angles are chosen so that $\alpha_1 = 60^\circ$, $\alpha_2 = 57^\circ 45'$ and $K = 2.114$, where K is the multiplying factor between the two radii shown and also between the field intensities of Zones I and II, the conditions of radial and vertical focussing, and also second order focussing, can be met (these figs. are an example).

27.3.67 as 1144672/26-25. Yu.G. Basargin (18.8.69)
Bul 13/1.4.69. Class 42h. Int.Cl.G Olt.

23

19761845

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--VOLUMETRIC PROPERTIES OF MELTS OF CADMIUM IODIDE CADMIUM CHLORIDE,
THALLIUM BROMIDE CADMIUM BROMIDE, AND THALLIUM CHLORIDE CADMIUM CHLORIDE
AUTHOR--(102)-ILYASOV, I.I., BARSEGOV, D.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1426-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--VOLUMETRIC ANALYSIS, SPECIFIC DENSITY, MOLTEN CHLORIDE,
IODIDE, BROMIDE, CADMIUM CHLORIDE, THALLIUM CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1396 STEP NO--UR/0078/70/015/005/1426/1427
CIRC ACCESSION NO--AP0135070
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0135070
ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A DIAGRAM OF D. AND EQUIV. VOLS.
OF THE TITLE SYSTEMS IS CONSTRUCTED. THE DEVIATION FROM LINEARITY OF
THE EXPTL. CURVES IS DUE TO COMPLEXING IN THE SYSTEMS. FACILITY:
ROSTOV.-NA-DONU PEDAGOG. INST., ROSTOV-ON-DAN, USSR.

UNCLASSIFIED

USSR.

UDC: 591.104

BARSEGYAN, L. Kh., KAKUSHKINA, N. V., and PIRUZYAN, L. A.

"Change in Reaction of Oxyhemoglobin Transhemization in Mice After Exposure to a Constant Magnetic Field"

Moscow, Izvestiya Akademii nauk SSSR--Seriya biologicheskaya, No 5, 1972, pp 785-787

Abstract: This brief communication offers the results of a study of the action of a constant magnetic field of 5000 oersteds on the reaction of the transhemization of oxyhemoglobin (HbO_2) in mice after 24 hours. The reactions and the processing of the experimental data were performed by the known method of Blyumenfel'd and Charnyy, in 1950, and Blyumenfel'd in 1957. The experimental E_a of this reaction is the same as the E_a in the reduction reaction of HbO_2 , which makes investigation of the transhemization reaction convenient for estimating the functional state of the hemoglobin. The authors find that the value of E_a they obtained for mice is the same as the value of E_a for the HbO_2 in dogs and the E_a of the reduction reaction of the oxyhemoglobin complex. They found also that the action of the magnetic field causes an
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UDC: 591.104

BARSEGYAN, L. Kh., et al, Izvestiya Akademii nauk SSSR--Seriya biologicheskaya, No 5, 1972, pp 785-787

increase in E_a . Finally, they found an agreement between their results and those of Piruzyan, et al (1971) who showed that the change in the number of regular elements and the concentration of free radicals in the mice's blood is maintained for one or two weeks after exposure to the magnetic field, and then returns to normal in three weeks.

1/1

- 104 -

BARSEGYAN, L. Kh.



DEPARTMENT OF THE ARMY
NATIONAL INTELLIGENCE SERVICE CENTER
TRANSLATION DIVISION
4301 SOUTHWEST ROAD
WASHINGTON, D.C. 20340

CLASSIFICATION:

UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE:

Effect of Laser beam on Biological Objects
Vozdeystviye luchej krasnogo sveta na biologicheskie ob'ekty

AUTHOR(S):

Piruzov, L. A.; Dement'ev, V. P.; Lashin, L. M.;
Savchenko, G. S.; Kopylov, V. V.; Krasnaya, G. V.;
Romanov, G. V.

PAGES:

20

SOURCE:

Paper Delivered at 4th ANS, Houston Tex. 1
27 April 1971

ORIGINAL LANGUAGE: Russian

TRANSLATOR:

DNI

RISC TRANSLATION NO. 1367

APPROVED PLK

DATE 10 November 1972

1. A. A. Ivanov, V. P. Kuznetsov, L. Kh. Savchenko, V. A. Shchegolev, V. A. Zolotarev, G. V. Korotkiy, V. A. Kuznetsov, V. A. Kuznetsov (Izrael) na biokhimicheskiye ob'yekty. Paper delivered at 42nd All-Union Meeting, 27 April 1971, Rostov.

Theoretical computations are made of the temperatures reached in tissue at different laser radiation energy levels, making possible a preliminary estimate of the temperature generated in the tissue at a given irradiation energy. Morphological investigations confirmed the theoretical computations of the temperature coefficients.

irradiation of the concentration of free radicals in pigmented tissue subjected to an unfocused laser beam has shown that low energy densities do not disturb the physical and chemical properties of the tissue that might trigger biochemical processes.

The introduction of lasers into the arsenal of scientific laboratories has made it possible to begin investigations dealing with the effect of powerful light fluxes on biological objects. In this matter the development of specific technical conditions for laser operation

USSR

UDC 591.105

PIRUZYAN, L. A., GLEZER, V. M., LOMONOSOV, V. A., ~~PARSECYAN, I. KH.~~, KHAVKINA, L. S., Institute of Chemical Physics of the USSR Academy of Sciences

"Effect of a Constant Magnetic Field on the State of the Blood System of Mice"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1972, pp 142-145

Abstract: A study was made of the effect of a constant magnetic field on the state of the blood system and the free radical content in the blood of mice. The constant magnetic field intensity was 5,000 oersteds for exposure times of 4, 24 and 72 hours. After exposure to a constant magnetic field, the number of erythrocytes, reticulocytes and leukocytes in the blood of mice increases, the hemoglobin content increases, the erythrocyte production per cubic millimeter of blood per day increases, and the free radical content increases. A change in the qualitative composition of the erythrocytes expressed in an increase in the number of cells of increased stability is observed. A correlation between the number of erythrocytes, reticulocytes, the diurnal erythropoiesis and the variation in free radical activity of the blood of mice after the effect of a constant magnetic field were established. Analysis of the dynamics of the variations of the hemotologic indexes and free radical activity in the blood of mice after the effect of the constant magnetic

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PIRUZYAN, L. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya,
No 1, 1972, pp 142-145

field shows that they are of a monotypic nature.

2/2

- 39 -

USSR

UDC 591.044

PERUZYAN, L. A., BARSEGYAN, L. Kh., MUKHORTOVA, O. M.,
SAVCHENKO, G. S., and CHIRIKIN, V. M., Institute of Chemical
Physics, Academy of Sciences USSR

"Effect of a Permanent Magnetic Field on the Concentration of
Free Radicals in Mouse Organs and Tissues"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya,
No 1, 1971, pp 128-132

Abstract: Exposure of mice to a permanent magnetic field (500
oersteds) for 4, 24, and 72 hours resulted in a marked decrease
in the free radical content of the liver, spleen, kidneys, muscles,
heart, and spleen (but not the brain). The low point, reached
2 to 7 days after the action was halted, varied with the organ
and length of exposure, ranging from 28 to 55% of the control
level. The normal concentration of free radicals was restored
during the ensuing days. The maximum decrease in relation to
the length of exposure up to 3 days was directly proportional to
the square root of the exposure time, i.e., the effect of the
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PIRUZYAN, L. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1971, pp 128-132

magnetic field was not enhanced by increased exposure of up to 72 hours. Three days' exposure markedly increased the weight of the spleen but not that of the liver or kidneys. (The weight of the spleen remained abnormally high even on day 25, while the content of free radicals in the organ reached the normal level by day 20). Histological examination of the liver and kidneys revealed protein degeneration, impairment of the cytoplasmatic structure, and redistribution of the cytoplasm toward the nuclear and cellular membranes.

2/2

1/3 031 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--NEW HEAT RESISTANT SPRING ALLOY 17NKH8MYU -U-
AUTHOR--BELOV, B.G., PLATOVA, S.N., BARSEGYAN, L.V. B
COUNTRY OF INFO--USSR
SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (2), 25-8
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HEAT RESISTANT ALLOY, SPRING STEEL, LOW ALLOY STEEL,
ELASTICITY, NICKEL STEEL, CHROMIUM STEEL, NIOBIUM STEEL, ALUMINUM STEEL,
INTERMETALLIC COMPOUND/(U)ELASTOMAT METAL TEST EQUIPMENT, (U)17NKH8MYU
LOW ALLOY SPRING STEEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1988/1299 STEP NO--UP/0129/70/000/002/0025/0028
CIRC ACCESSION NO--AP0106078
UNCLASSIFIED

2/3 031

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106078

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALLOY CONTG. C SMALLER THAN OR EQUAL TO 0.06, CR 14-16, NB 9.5-10.5, MO 4-6, AL 1.0-1.5PERCENT AND NI WAS MELTED IN AN INDUCTION FURNACE, THE INGOTS WERE FORGED AT 1050-1170DEGREES AND THE SHEET BARS OBTAINED WERE HOT AND COLD ROLLED. THE 0.3 MM THICK MICROSPECIMENS AND THE 0.6 MM THICK, FLAT TEST PIECES WERE TENSION TESTED BY USING THE "AMSLER" MACHINE AT ROOM TEMP., AND UP TO 600DEGREES, RESP. THE ELASTIC LIMIT SIGMA SUB0.2, AND SIGMA SUB0.005 AND THE STRESS RELAXATION WERE DETG. BY THE BEND TESTS OF THE 0.3 TIMES 5 TIMES 100 MM SPECIMENS AT 500-600DEGREES; THE MODULUS OF ELASTICITY E WAS MEASURED BY THE RESONANCE FREQUENCY METHOD WITH THE "ELASTOMAT" APP. AND CYLINDRICAL 8 MM DIAM. SPECIMENS. THE COLD DEFORMED SPECIMENS, THOSE QUENCHED FROM 1100, 1150, AND 1200DEGREES, AND THOSE TEMPERED AT 750DEGREES FOR 5 HR AFTER QUENCHING FROM 1100-500DEGREES, WERE TESTED. THE ALLOY SHOWS HIGH RELAXATION STABILITY AT 500 AND 550DEGREES. THE STRESS DURING 50 HR TESTING DECREASES BY 8 AND 15PERCENT, RESP. INCREASE OF THE TEMP. UP TO 600DEGREES CAUSES THE 30PERCENT STRESS RELAXATION DURING 50 HR. THE CYCLIC STRESS TESTS SHOWED THAT NO. OF CYCLES TO FRACTURE AT 70-80 KG-MM PRIME2 WAS (3.8-4.7) TIMES 10 PRIME5. THE METALLOGRAPHIC EXAMNS. REVEALED THAT THE STRUCTURE OF THE ALLOY QUENCHED FROM 1150DEGREES CONSISTS OF THE GAMMA SOLID SOLN. GRAINS WITH A SMALL AMT. OF A 2ND PHASE. THE PHASE ANAL. REVEALED THE PRESENCE OF NI SUB3 NB, M SUB6 C, AND NB(CN) PHASES, WHERE M IS A METAL.

UNCLASSIFIED

3/3 031

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106078

ABSTRACT/EXTRACT--THE TEMPERING AT 750DEGREES FOR 10-25 HR CAUSES DECOMP. OF THE SUPERSATD. SOLID SOLN. ASSISTED BY THE PPTN. OF FINE DISPERSED FCC. (NI, CR) SUB3 (NB, MO, AL) PHASE OF THE NI SUB3 NB TYPE. J. PIETKIEWICZ.

UNCLASSIFIED

USSR

UDC 615.917

NIKOLOV, S. KH., LYUBETSKIY, KH. Z., RAISEL'YANTS, G. B., ZABELIN, A. A., NEFELOV, P. V., ONOPCHENKO, N. V., CHURSINA, M. A., YEREMIN, V. M., TRENSUK, R. A.

"Toxicologic Estimate of the New Organophosphorus Pesticide Bitex"

V sb. Vliyaniye ul'trazvuka, yadokhinik. i drugikh faktorov sredy na organizm cheloveka i pishch. produkty (Effect of Ultrasound, Poisons and other Factors of the Environment on the Organism of Man and Food Products -- collection of works), Krasnodar, 1971, pp 85-91 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.773)

Translation: Rats were injected intraventricularly with bitex (an organophosphorus pesticide; I: contains 50% active principle) dissolved in water (1 ml) in doses of 100, 200, 300, 400, 500, 600, 700 and 800 mg/kg, and they were observed for 3 weeks. With a dose of 100-200 mg/kg, the activity of the cholinesterase dropped by 2-3 times during the first 1-2 days, and it began to recover after 7-11 days. The dose of 100 mg/kg was taken as the minimum toxic dose. For doses of 300 mg/kg and higher, sluggishness, increased frequency of urination, diarrhea, contraction of the pupils, tears, paresis of the extremities, a drop in body temperature of 1-5°, an increase in the sedimentation rate, leucocytosis, neutrophilia and a reduction in the cholinesterase activity by 3-15 times were noted. The DL_{100} of I is 800 mg/kg, the DL_{50} is 384.6
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USSR .

NIKOLOV, S. KH., et al., Vliyanie ul'trazvuka, yadokhimik. i drugikh faktorov sredy na organizm cheloveka i pishch. produkty, Krasnodar, 1971, pp 85-91

(491.8-277.4 mg/kg). For rabbits (I was injected in doses of 25-200 mg/kg) the DL_{50} was calculated on the level of 82 (11.67-47.3) mg/kg. The pathomorphological changes in rabbits were characterized by circulatory disorders and dystrophy. USSR. Krasnodar, Medical Institute.

USSR

UDC: 632.95

BLIZNYUK, H.K., KHOKHLOV, P.S., KALUTSKIY, I.A., BARSHAVSKIY, S.L., All Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Method of Producing S-Phenyl-o-alkylbenzylthiophosphonates"

USSR Author's Certificate No. 239328, Filed 11/12/67, Published 5/08/69,
(Translated from Referativnyy Zhurnal Khimii, No 4, 25 Feb 70, Abstract No. 4 N713 P)

Translation: Pesticides of the general formula $X_nC_6H_5-nCH_2P(O)(OR)SC_6H_5-mY_m$ (I; X and Y - H, Cl; n - 0-2; R - C₁ - C₄ -alkyl) are produced by the reaction of S-phenylbenzylchlorothiophosphonates with the alcoholates of alkaline metals in a medium of organic solvent at 20-40°. Example. A solution of 0.02 mol $PhCH_2P(O)(SPh)Cl$ in 3 ml MeOH is added to 0.02 mol MeONa (from 0.46 g Na and 6.4 g MeOH) with agitation at 20-30°, the mixture is held one hour at 20-25° and 0.5 hours at 40°, then poured off into 30 ml water, the oil is separated, the water layer is extracted with benzene, the extract is combined with the oil, dried over Na_2SO_4 , the solvent is removed in a vacuum, producing $PhCH_2P(O)(OMe)SPh$, yield 62.5%, n_D^{20} 1.5700, d_4^{20} 1.1913. Similarly, I are produced (given are X_n , Y_m , R, yield in %, n_D^{20} , d_4^{20}): H, H, Et, 79.5, 1.5430 1.1319; 4-Cl, 2.5-Cl₂C₆H₃, Bu, 76.2 1.5643, 1.2740/
1/1

V.M. Shcheglova

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--GLAZES CONTAINING LITTLE OR NO BORON IN THE PRODUCTION OF
EARTHENWARE -U-
AUTHOR--(04)--SIVCHIKOVA, M.G., KOVALENKO, YU.G., BARSHCHEVSKAYA, A.F.,
SIDORENKO, A.I.
COUNTRY OF INFO--USSR
SOURCE--STEKLO KERAM. 1970, 27(3), 40-2
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CERAMIC COATING, CHEMICAL COMPOSITION, THERMAL STABILITY,
BORON OXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1589 STEP NO--UR/0072/70/027/003/0040/0042
CIRC ACCESSION NO--AP0125211
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125211

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. TWO GLAZES OF THE COMPN. SIO SUB2 2.251, 2.67; AL SUB2 O SUB3 0.233, 0.25; CAO 0.304, 0.329; FE SUB2 O SUB3 0.005, 0.005; B SUB2 O SUB3 O, 0.185P NA SUB2 O 0.206, 0.248; K SUB2 O 0.044, 0.049; MGO 0.116, 0.100; SRO 0.167, 0.174; AND ZNO 0.163, 0.098 MOLE WERE USED FOR GLAZING OF EARTHENWARE WITH 9-12PERCENT OPEN POROSITY. THE FIRING WAS CARRIED OUT IN TUNNEL FURNACES AT 1140-1200DEGREES DURING 16-18 HR. AFTER FIRING, THE LOW B GLAZE SHOWS LEVEL SPREADING AND GOOD POLISH. THE GLAZE IS THERMALLY STABLE. ITS COEFF. OF THERMAL EXPANSION IS SLIGHTLY CHANGED: IT IS 7.0 TIMES 10 PRIME NEGATIVE6 IN THE INTERVAL 20-400DEGREES, AND 7.54 TIMES 10 PRIME NEGATIVE6 AT 20-600DEGREES WHILE THAT OF AN INDUSTRIAL SAMPLE WAS 7.15 TIMES 10 PRIME NEGATIVE6, AND 8.25 TIMES 10 PRIME NEGATIVE6-DEGREE. THE FUSIBILITY OF LOW B GLAZES IS COMPARABLE WITH THAT OF INDUSTRIAL ONES. AT 1140DEGREES IT IS CHARACTERIZED BY THE MIRROR SPREADING AND BY GLOSS. THESE PROPERTIES ARE PRESERVED EVEN AT 1230DEGREES. PETROGRAPHICALLY, THE GLAZE IS PURE GLASSY PHASE WITHOUT REMAINING QUARTZ GRAINS AND GASEOUS BUBBLES. ITS THICKNESS VARIES 100-30 MU. THE POSSIBILITY TO DECREASE THE B SUB2 O SUB3 CONTENT FROM 9.5 TO 4.7PERCENT IN THE GLAZES WAS VERIFIED BY PRODUCTION GLAZED EARTHENWARE. FACILITY: UKR. NAUCH. ISSLED. INST. STEKLO. FARFORO FAYANS. PROM., USSR.

UNCLASSIFIED

USSR

UDC 77

BARSHCHEVSKIY, B. U., GUREVICH, YU. YA.

"Effect of the Disappearance of a Hidden Image in the Light of the Quantum Theory of Photoemission"

V sb. Mezhdunar. kongress po fotogr. nauke, Moskva, 1970, Priroda fotogr. chuvstvitel'nosti (International Congress on Photographic Science, Moscow, 1970, Nature of Photographic Sensitivity -- Collection of Works), no place of publication given, Vneshtorgizdat, no year given, pp 175-178 (from RZh-Fizika, No 12(I), Dec 70, Abstract No 12D1357)

Translation: The possibility of applying the quantum theory of photoemission from a metal into a dielectric to describe the Herschel effect interpreted as photoeffect from metallic particles of Ag (centers of the hidden image) in AgHal dielectric crystals is discussed. Using a general formula from this theory for the spectral dependence of photocurrent and selecting probable values for the parameters entering into it, the authors have obtained good agreement between

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USSR

BARSHCHEVSKIY, B. U., GUREVICH, YU. YA. Mezhdunar. kongress po fotogr. nauke,

Moskva, 1970, Priroda fotogr. chuvstvitel'nosti, no place or publisher given
Vneshtorgizdat, no year given, pp 175-178

calculated and experimental data for AgCl and AgBr crystals. It is concluded from this that the centers of the hidden image under the experimental conditions called upon for a comparison with the calculation are multiatomic formations of the metallic type. A. L. Kartuzhanskiy.

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- 72 -

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RELATION OF THE HERSCHEL EFFECT WITH ELECTRON PHOTOEMISSION -U-
AUTHOR--(02)-BARSHEVSKIY, B.U., GUREVICH, YU.YA. **B**
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 115-18
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--PHOTOEFFECT, DIELECTRIC MATERIAL, ELECTRON EMISSION, PHOTO
EMISSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1792 STEP NO--UR/0020/70/191/001/0115/0118
CIRC ACCESSION NO--AT0125404
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AT0125404

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. IN THE HERSCHEL EFFECT, LATENT
IMAGE CENTERS ABSORB LONG WAVELENGTH LIGHT AND EMIT ELECTRONS.
PUBLISHED DATA ON THE VARIATION IN PHOTOEMISSION WITH FREQUENCY AGREE
WITH THE QUANTUM THEORY OF PHOTOEMISSION AT THE BOUNDARY OF A METAL AND
A DIELEC. FACILITY: INST. ELEKTROKHM., MOSCOW, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--APPLICATION OF URBACH'S RULE TO THE PHOTOELECTRIC AND PHOTOGRAPHIC
SENSITIVITY OF SILVER BROMIDE AND SILVER CHLORIDE IN THE REGION OF
AUTHOR--BARSHCHEVSKIY, B.U. *B*
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(3), 906-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHLORIDE, SILVER COMPOUND, PHOTOGRAPHIC PROPERTY,
PHOTOELECTRIC EFFECT, EXCITON ABSORPTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1463 STEP NO--UR/0181/70/012/003/0906/0908
CIRC ACCESSION NO--AP0120250
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120250

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY WAS ESTABLISHED OF APPLYING URBACH'S RULE TO PHOTOELEC. AND PHOTOGRAPHIC SENSITIVITY IN THE REGION OF EXCITON ABSORPTION, SINCE IN THIS REGION MAX. AND LONG WAVELENGTH BOUNDARIES OF THEIR SPECTRAL CHARACTERISTICS ALMOST COINCIDE. THE RESULTS SHOW THAT FOR NONSENSITIZED AGX LAYERS URBACH'S CONST. SIGMA IS EQUAL TO 0.06 FOR BOTH PHOTOELEC. AND PHOTOGRAPHIC SENSITIVITY. FACILITY: VSES. ZAOCH. INST. INZH. ZHELEZNODOROZH. TRANSP., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--PHOTOOXIDATION OF SULFUR BY HYDROGEN PEROXIDE. SOLVENTS -U-
AUTHOR--BARSHCHEVSKIY, I.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 521-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHOTOLYSIS, OXIDATION, SULFUR, HYDROGEN PEROXIDE, SOLVENT ACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0816 STEP NO--UR/0074/70/044/002/0521/0523
CIRC ACCESSION NO--AP0134549
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOOXIDATION OF SOLS OF S BY H SUB2 O SUB2 IN MECH, ETOH, PROH, AND ISO-BUGH WAS STUDIED BY MEANS OF PH MEASUREMENT, DETN. OF H SUB2 SO SUB4 AND OBSERVATION OF THE TYNDALL EFFECT. THE REACTION PROCEEDS MOST EFFECTIVELY IN MECH AND DOES NOT OCCUR IN THE ABSENCE OF ALC. HCHO AND HCO SUB2 H (THE PRODUCTS OF PHOTOOXIDATION OF MECH) HAVE NO EFFECT. THE ESSENTIAL ROLE IS ASCRIBED TO THE RADICALS FORMED IN PHOTOLYSIS AND PHOTOOXIDATION OF MECH. FACILITY: MOSK. INST. INZH. TRANSP., MOSCOW, USSR.

UNCLASSIFIED

008 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--DETERMINATION OF THE DIFFUSION COEFFICIENT IN POROUS CATALYSTS BY A
DELAY TIME TECHNIQUE IN THE ABSENCE OF PRESSURE DROP -U-
AUTHOR--(03)-GRACHEV, G.A., IONE, K.G., BARSHEV, A.A.

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 541-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIFFUSION COEFFICIENT, CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3008/0882

STEP NO--UR/0195/70/011/002/0541/0543

CIRC ACCESSION NO--AP0137910

UNCLASSIFIED

2/2 008
CIRC ACCESSION NO--AP0137910

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR DETN. OF
DIFFUSION COEFF. (D) IN STATIONARY AS WELL AS IN NONSTATIONARY SYSTEMS
BY MEASURING COUNTER DIFFUSIONAL FLOWS IN A CATALYST TABLET. THE METHOD
INVOLVES THE CONVENTIONAL TIME DELAY TECHNIQUE AND THE THEORIES OF WICKE
HOLLENCACN (1941) AND TIMOFEEV (1962). FACILITY: INST. KATAL.,
NOVOSIBIRSK, USSR.

UNCLASSIFIED

BARSHEVSKIY V.B.

Acc. Nr.: ANO104123

Ref. Code: UR 9003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. AL, PEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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Reel/Frame

19870555

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Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUSKO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIRYANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIMPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT,

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Reel/Frame

19870556

KZ

Acc. Nr.

AP0048840

Abstracting Service:
CHEMICAL ABST.

Ref. Code
UR 0459

B

91078g Polyester plasticizers studied by nuclear magnetic resonance. Identification of structure and determination of molecular weight. Urman, Ya. G.; Khramova, T. S.; Gorbunova, V. G.; Barshel'n, R. S.; Slonim, I. Ya. (Nauch. Issled. Inst. Plast. Mass. Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 160-4 (Russ). NMR spectra of $\text{BuO}[\text{CO}(\text{CH}_2)_n\text{CO}_2\text{RO}]_m\text{Bu}$ (I) [R is $(\text{CH}_2)_2$, $(\text{CH}_2)_4$, $(\text{CH}_2)_6$, $(\text{CH}_2)_8$, CH_2CHMe , $(\text{CH}_2)_2\text{CHMe}$, $(\text{CH}_2\text{CH}_2)_2\text{O}$, $(\text{CH}_2\text{CH}_2\text{O})_2\text{CH}_2\text{CH}_2$, $(\text{CH}_2\text{CH}_2\text{O})_3\text{CH}_2\text{CH}_2$, or $(\text{CH}_2\text{CH}_2\text{O})_4\text{CH}_2\text{CH}_2$] prep'd. by transesterification of $\text{BuO}_2\text{C}(\text{CH}_2)_n\text{CO}_2\text{Bu}$ with HOROH confirm their linear polyester structure. All I contain BuO end groups which give a signal at 0.95 δ . The signal intensity was used to det. the no.-av. mol. wt. of I to ~5000 with 10-15% accuracy.

CPJR

LD

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REEL/FRAME
19800607

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1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--EFFECT OF POLY(VINYL CHLORIDE) PLASTICIZATION ON THE LIFE OF FILM
WELDS -U-
AUTHOR-(03)-DODIN, M.G., RATNER, S.B., BARSHEYN, R.S.
COUNTRY OF INFO--USSR
SOURCE--PLAST. MASSY 1970, (3), 54-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--POLYVINYL CHLORIDE, PLASTIC FILM, WELD EVALUATION, PLASTIC
MECHANICAL PROPERTY, RUPTURE STRENGTH
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1790 STEP NO--UR/0191/70/000/003/0054/0056
CIRC ACCESSION NO--AP0123587
UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123587

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DURABILITY OF PLASTICIZED POLY(VINYL CHLORIDE) (I) WELDED BONDS OBEYED THE RATNER EQUATION (S. B. RATNER, 1968). PLASTICIZATION OF I DID NOT AFFECT THE MAX. ACTIVATION ENERGY OF FAILURE OF THE WELDED BOND, BUT DID AFFECT THE STRUCTURE SENSITIVE CONST. UPSILON, ANALOGOUS TO UPSILON IN THE ZHURKOV EQUATION (S. N. ZHURKOV, 1961). INCREASED DEGREE OF PLASTICIZATION LOWERED THE TEAR STRENGTH AND INCREASED THE PEELING STRENGTH.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THERMOOXIDATIVE BREAKDOWN AND STABILIZATION OF POLYESTER
PLASTICIZERS -U-
AUTHOR-(05)-LEVANTOVSKAYA, I.I., YAZVIKOVA, M.P., BARSHEYN, R.S.,
GORBUNOVA, V.G., ISAYEVA, Z.S.
COUNTRY OF INFO--USSR
SOURCE--PLAST. MASSY 1970, (2), 52-4
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, CHEMISTRY
TOPIC TAGS--THERMAL DEGRADATION, OXIDATIVE DEGRADATION, PLASTICIZER,
POLYESTER RESIN, GLYCOL, THERMAL STABILITY, CHEMICAL STABILIZER,
PHOSPHORUS COMPOUND, ORGANIC SULFUR COMPOUND, PHENOL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0681 STEP NO--UR/0191/70/000/002/0052/0054
CIRC ACCESSION NO--AP0119589
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119589

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDATIVE THERMAL DEGRADATION OF POLYESTER PLASTICIZERS (I), PREPD. FROM ADIPIC ACID (II) AND ALKYLENE GLYCOLS (E.G., HOCH SUB2 CH SUB2 OH, HOCH SUB2 (CH SUB2) SUB3 CH SUB2 OH, HOCH SUB2 (CH SUB2) SUB4 CH SUB2 OH), II AND ISOGLYCOLS (E.G., HOCH SUB2 CH(OH)ME, HOCH SUB2 CH SUB2 CH(OH)ME, AND HOCH SUB2 CME SUB2 CH SUB2 OH), II AND OXYALKYLENE GLYCOLS (III) (E.G., O(CH SUB2 CH SUB2 OH) SUB2, HO(C SUB2 H SUB4 O) SUB3 H, AND POLY(ETHYLENE GLYCOL) OF MOL. WT. 400) WAS STUDIED AT 120-200DEGREES. I PREPD. FROM II AND III WERE THE MOST SUSCEPTIBLE TO OXID. THE THERMAL STABILITY OF I WAS INVERSELY PROPORTIONAL TO THE NO. OF CH SUB2 GROUPS IN THE GLYCOL. THE MOST EFFECTIVE STABILIZERS OF I WERE POLYGARD, POLYPHOSPHINITE, AND ESP. 2.2 PRIME, THIOBIS(4,METHYL,6, TERT,BUTYLPHENOL).

UNCLASSIFIED

USSR

UDC 576.851.49.097.088

YAGUD, S. L., and BARSHTYUN, Yu. A., Kiev Scientific Research Institute of Epidemiology, Microbiology, and Parasitology, Kiev

"Study by the Fluorescent Antibody Method of Localization of Typhoid Antigen During Experimental Infection"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 5, Sep/Oct 71, pp 641-646

Abstract: The dynamics of distribution of typhoid antigen and its localization in organs and tissues were studied upon experimental enteral and subconjunctival infection of rabbits and guinea pigs, using the direct fluorescent antibody method and in some cases the indirect method. The results were checked by microbiological assay. The antigen was detected in the earliest period after infection in all lymphoid organs and formations. The highest intensities and duration of fluorescence were observed in lymph nodes closest to the site of introduction of the infectious agent and in the spleen. The antigen was first present outside of cells and was then concentrated mainly in reticuloendothelial cells. The results obtained have a bearing on the development of immunity to typhoid and the typhoid carrier state.

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- 10 -

USSR

YAGUD, S. L., and BARSHTEYN, Yu. A., Kiev Scientific Research Institute of Epidemiology, Microbiology, and Parasitology, Kiev

"Interaction of the Pathogen With the Organism and Its Separate Structures in Experimental Typhoid Infection"

Kiev, Mikrobiologicheskii Zhurnal, Vol 33, No 6, Nov/Dec 71, pp 771-772

Abstract: Using the immunofluorescence method, the resorption of the antigen in reticular and lymphoid cells of various organs was studied upon experimental infection of rabbits with typhoid. Results obtained by the fluorescent antibody method indicated that typhoid bacteria function as intracellular parasites. This was confirmed by experiments in vitro with cell cultures of macrophages. After diffusion chambers containing a definite amount of live typhoid bacteria had been implanted into the abdominal cavity of rabbits, the animals exhibited all symptoms of a typhoid infection, although the bacteria did not diffuse outside the chambers. Immunological shifts were observed both in the organism of the rabbits and in the culture liquid within the chambers. As indicated by the antibodies that formed, O, H, and Vi antigens diffused out of the chambers. After the chambers had been implanted into immunized rabbits, 19-S and 7-S antibodies penetrated readily into the chambers. Humoral factors diffusing

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USSR

YAGUD, S. L., and BARSHEYN, Yu. A., Mikrobiologicheskii Zhurnal, Vol 33,
No 6, Nov/Dec 71, pp 771-772

into the chambers did not inactivate the bacteria; inactivation took place only when lymphoid and macrophage cells were introduced into the chambers. In the experiments conducted, the bacteria multiplied freely in the culture liquid of the implanted chambers.

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- 8 -



DEPARTMENT OF THE ARMY
U.S. ARMY FOREIGN SCIENCE AND TECHNOLOGY CENTER
320 RICHMONTH STREET, N.E.
CHARLOTTESVILLE, VIRGINIA 22904

In Reply, Refer to:
FSTC/HT 23.1095-72
DIA Task No. 770-23.01

Date: 20 December 1972

TRANSLATION

ENGLISH TITLE: ECONOMIC EFFECTIVENESS OF PROTECTIVE POLYMER COATINGS

(1/17/72)

AUTHOR: I. M. Barskaya, S. Sh.

REQUESTOR: AUMALS-EWS

SOURCE: Konservnaya i Oveshchesushil' TRANSLATOR: ACSI R-1612
1971, pp 17-18
LANGUAGE: Russian

COUNTRY: USSR

KEY WORDS:

PLASTIC PRODUCTION
PLASTIC INDUSTRY
PROTECTIVE COATING
POLYMER
FOOD CANNING
FOOD TECHNOLOGY

Approved for public release; distribution unlimited.

BARSKAYA, I. M.

USSR

UDC 616.12-089.166-059:615.832.9-07:616.12-073.97

BARSKAYA, L. A., Laboratory of Physiology Department of Anesthesiology Institute of Surgery imeni A. V. Vishnevsky, Academy of Medical Sciences USSR, Moscow

"Electrocardiographic Changes during Operations on the Heart and Major Vessels under Conditions of Hypothermia"

Moscow, Kardiologiya, Vol 10, No 7, Jul 70, p 138

Translation: Electrocardiographic analysis was conducted in two groups of patients in whom an operation was performed under conditions of hypothermia without excluding the heart from circulation (suturing of interarterial anastomosis in 50 patients) and with exclusion of the heart from circulation (repairing a defect in the interauricular septum and removal of pulmonary artery stenosis in 15 patients).

Premedication consisted of atropine and promedol. To reduce the reaction of the body to cooling, large doses of muscle relaxants were used in conjunction with surface anesthesia.

Lowering of the patients' body temperature to 34-29°C was accompanied by reduction of cardiac contractions. The tachycardia evoked by premedication and the anesthetic was reduced during the period of cooling the patients to 34-29°C. During immersion in cool water prior to the operation, there were changes in the terminal part of the ventricular complex in 25 patients; in only 3 patients was there a migration of the source of a pacemaker and atrioventricular rhythm. In 11 patients,

1/3

USSR

BARSKAYA, I. A., Kardiologiya, Vol 10, No 7, Jul 70, p 138

alteration of the T-wave (levelled off, biphasic, or negative) and displacement of the RS-T interval disappeared upon lowering of the temperature to 35-33°C. The described dynamics of the terminal part of the ventricular complex EKG could have been the result of reflex changes under the influence of cooling of the skin; in proportion to the lowering of the patients' body temperature and the corresponding need for oxygen, the degree of hypoxia present in those patients was diminished, which could also lead to positive dynamics in the EKG. The systolic indicator remained stable during the cooling period. During the period of clamping of the pulmonary and subclavian arteries, a change in the terminal part of the ventricular complex EKG was found in 20 of the 50 patients. Within 1-4 min after removal of the clamps as the interarterial anastomosis began to function, these shifts disappeared completely in all patients.

Exclusion of the heart from the circulation was accompanied by marked functional disturbances of the myocardium (appearance of sharp, high, triangular forms of the T-waves, considerable dislocation of the RS-T interval) and various disturbances of the rhythm and conductivity, resulting in an almost complete transverse blockade. After reestablishment of circulation, however, cardiac function was restored comparatively rapidly (within 1-3 min). The sharpest changes occurred during exclusion of circulation for a period of more than 4-5 min; longer exclusion

2/3

USSR

BARSKAYA, L. A., Kardiologiya, Vol 10, No 7, Jul 70, p 138

of the heart from circulation (up to 9-13 min) was accompanied by the appearance of complete transverse blockade in 4 patients and by ventricular fibrillation in 2.

In none of the 65 patients was the warming period accompanied by any appearance of disturbances in rhythm or conductivity. In this period there was a complete restoration of the original EKG indicators.

The comparatively rapid normalization of EKG with the beginning of functioning anastomosis and after reestablishment of circulation, even in cases of sharp disturbances of a hypoxic origin, indicates the prophylactic role of moderate hypothermia conducted in conjunction with surface and deep anesthesia.

USSR

UDC 632.4:582.281.14

~~BARSKAYA, T. A.~~, and KORENEVSKAYA, T. YU., Institute of Biology, Academy of Sciences USSR, Laboratory of Plant Physiology Karelian Branch

"Conditions Favoring the Infection of Potato Tubers by Incompatible Races of *Phytophthora infestans* (Mont.) D By"

Leningrad, Mikologiya i Fitopatologiya, Vol 5, No 2, 1971, pp 143-148

Abstract: Cooling and warming of potato tubers and the effects of either treatment on the content of phenols and carbohydrates were studied in regard to changes in resistance to infection with *Phytophthora infestans* (Mont.) d By. Ten potato types and two hybrids were studied for their resistance during the vegetation period as well as during storage. The cooling tests on the tubers were carried out in a specially constructed chamber, and warming of the tubers was done by means of an electrothermostat. After infection with suspensions of *Ph. infestans*, both control and experimental tubers were maintained at 20°C in air-conditioned chambers for a period of 7-8 days. The effect of the temperature regime on the resistance to *Phytophthora* infection during inoculation on peel, on secondary eyelets, and on an incision was studied. The susceptibility of tubers to *Ph. infestans* species changed with the extent of winter storage. After termination of the period, resistance

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USSR

BARSKAYA, T. A., and KORENEVSKAYA, T. YU., Mikologiya i Fitopatologiya, Vol 5, No 2, 1971, pp 143-148

to incompatible races of the pathogen may be lost. Warming or cooling of the tubers prior to infection produces disease of certain types of tubers. With decrease in resistance as a result of the temperature regime, an increase in the content of phenols and dissolved carbohydrates was observed in tubers. The conditions for infiltration of Ph. infestans through eyelets into the tubers are enhanced by cooling as well as by warming. This infiltration leads to self-warming of the tubers, and this is considered one of the reasons for the sharp increase in potato tuber infection during transport. Infection can proceed also by fungus spores adhering to tubers carrying soil particles.

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USSR

UDC 622.4

BARSKAYA, T. A., and KORENEVSKAYA, T. YU., Institute of Biology, Karelian Branch, Academy of Sciences USSR, Petrozavodsk

"Resistance of Potato Plants to Phytophthora Depending on the Age of the Plants and their Physiological Condition"

Moscow, Se; 'skokhozyaystvennaya Biologiya, Vol 5, No 6, 1970, pp 883-887

Abstract: Experimental infection of potatoes with the fungus *Phytophthora infestans* Mont. de Bary was conducted. Potato plants of the varieties Khibinskiy Ranniy, which is susceptible to infection, Izstades, which is relatively resistant and also the wild species *S. punae*, which is susceptible were used. It was established that the resistance of plants and parts of plants (bottom vs. top leaves) to infection decreased with increasing deterioration due to age. Towards the end of the growing period, the resistance decreased at the time when the leaves became yellow. Izstades plants were less susceptible to age deterioration than those of Khibinskiy Ranniy. *S. punae* plants did not show variations of resistance with age, because their leaves did not yellow - the bottom leaves became brown and immediately fell off. High resistance to infection among plants of the same variety was associated with an increased content of protein, starch, and

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USSR

BARSKAYA, T. A., and KORENEVSKAYA, T. YU., Sel'skokhozyaystvennaya Biologiya, Vol 5, No 6, 1970, pp 883-887

soluble carbohydrates, as well as high invertase activity. With progressive yellowing of plants and of leaves left on the plants (increased susceptibility to infection), the content of starch and of soluble carbohydrates decreased. Upon infection of young plants with the fungus, the content of peroxidase in the leaves increased considerably; this reaction was weakened in old plants. Old plants susceptible to infection showed a decrease in invertase activity, which was not observed in the leaves of young plants resistant to infection. Growth of plants under field conditions at low temperatures, which delayed ageing, reduced susceptibility to infection.

2/2

- 40 -

AA0043351

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/76

236835 SEMI-AUTOMATIC X-RAY INSPECTION RIG for
welded turbine rotors is a wheeled carriage
with two inclined turntables, each receiving a
disc above an X-ray film. Each turntable is
supported in ball bearings and fitted with a
ratchet mechanism and a pneumatic cylinder which
can be used to turn by each reciprocating motion
each turntable through a certain angle.

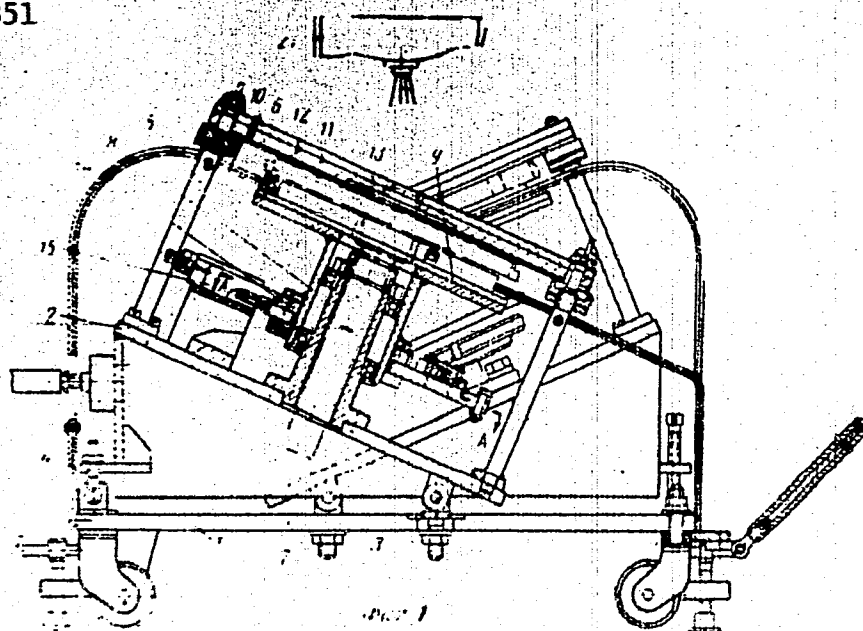
27.11.67 as 1200479/25-28 A.G. BARSUKI (27.6.69)
Bul 7/3.2.69. Class 42k. Int. Cl. G 01 n.

112

18

19761593

AA0043351



19761594

USSR

UDC: 621.398.694.3:538.652

ABRAMOV, V. M., ~~BARSKIY, B. R.~~, VERTUSHKIN, B. A., GOLOVIN, V. V.,
ZORIN, V. M., KRINKIN, A. A.

"A Pneumatic Computer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 8, Mar 71, Author's Certificate No 296091, division G, filed 17 Oct 68,
published 12 Feb 71, p 148

Translation: This Author's Certificate introduces a pneumatic computer which contains a single-diaphragm element with two nozzles which are coaxial with each other in the flow chamber of the element. The dead-end chamber of the element is connected to a multiplicand pressure source, and the inner nozzle is connected through a choke to a multiplier pressure source and directly to the output channel of the device, the annular channel formed by the nozzles being open to the atmosphere. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by connecting the flow chamber of the element through a choke to a divisor pressure source.

1/1

USSR

UDC 621.165.001.5

BARSKIY, I. A.

"Speed Performance of a Turbine With Adjustable Stator Blades"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy--Aviatsionnaya Tekhnika, No 3, 1973, pp 64-68

Abstract: Results are presented of an experimental determination of the relationship of the basic parameters of a two-stage turbine with turnable nozzle

units to the ratio $\frac{\sqrt{\sum u^2}}{C_{ag}}$ at different angles α_1 . It is determined that

the optimal ratio mentioned above and the relative relationship of the efficiency of the turbine to this ratio are the same at different angles of emergence of the stream from the nozzle units. Empirical relationships are given for determining the efficiency and the degree of reactivity of the turbine. 2 figures. 2 references.

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USSR

UDC: 621.438

BARSKIY, I. A.

"Influence of Changes in Throughput Capacity of the Power Turbine on the Parameters of a Dual-Shaft Gas Turbine Engine"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 11, 1972, pp 85-90.

Abstract: A method of calculation is developed, allowing the influence of a change in adjusted flow rate through a power turbine caused by reduction in rotating speed on the parameters of a dual-shaft gas turbine to be determined. The influence of a change in speed of the power turbine is strongest in a turbine engine with steep characteristics of compressor and two-stage power turbine. In this case, at low power turbine rotating speed, the gas temperature may drop by 2-4%, the torque by 10-15%.

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- 155 -

Turbine and Engine Design

USSR

UDC 621.438

BARSKIY, I. A., Candidate of Technical Sciences

"Characteristics of a Two-Shafted Gas Turbine Engine Under a Drop in the Revolutions of a Turbocompressor"

Moscow, Izvestiya vysshikh uchebnykh zavedeniy, Mashinostroyeniye, No. 12, 1971, pp 85-88

Abstract: The number of revolutions of a turbocompressor, the gas temperature, and power of the gas turbine engine were determined as functions of time under a drop in the revolutions of the turbocompressor from their rated value under various expenditures of fuel under a no-load condition. It was shown that a rapid drop in power of a gas turbine engine without a heat exchanger is achieved under complete shutoff of the fuel supply under a drop in revolutions. The power drops insufficiently rapidly even under shutting off the fuel supply in a gas turbine engine with a heat exchanger due to the thermal inertia of the latter and this requires that special measures be taken to accelerate the lowering of power. Even complete shutting off of the fuel supply does not lower the power to zero over the course of 2-3 seconds. However, shutting off

Card 1/2

RARSKIJ, I. A., Izvestiya vysshikh uchebnykh zavedeniy, Mashinostroyeniye, No. 12, 1971, pp 85-88

the fuel supply under a drop in revolutions of the turbocompressor in a gas turbine engine without a heat exchanger is an effective method of rapidly dropping the power of the gas turbine engine. It is noted that in the automobile gas turbine engines of General Motors and Chrysler that are equipped with heat exchangers, a drop in revolutions is produced under complete shut off of the fuel supply; in the opinion of the author, shutting off the fuel supply to drop excess power in a gas turbine engine under no-load conditions is not the best solution both due to a complication in the automatic regulation system and a reduction in the lifetime of the gas turbine engine due to frequent starts, and in addition this measure is not sufficiently effective. The application of a controlled nozzle for the power turbine or transfer of gas before the power turbine is considered more effective.

Card 2/2

BARSKIY, I. P.

SPS 57351
27 OCT 72

- 20 -

If workers visit a municipal polyclinic only after work, i.e. in the evening, this means that they spend part of their leisure time there, and this creates difficulties, especially when the visits are related to dispensary care, i.e. when the visitors feel well. If the polyclinic is close to their job, the situation is different: the closer it is the more individuals can go there during work time.

We can distinguish two variants of location of polyclinic institutions: the urban polyclinic which is located in the center of a rayon and takes care of all its population as well as industrial workers in the same rayon; polyclinic (medical and sanitary center) located near or on the premises of an enterprise which takes care primarily or exclusively of the employees of this and neighboring enterprises. Of course, industrial workers do not have the same opportunity to visit both types of polyclinic institutions and make use of them; the differences are related primarily to the time required. B.P. Zimovskiy and G.A. Malyukova indicate that a significant number (30%) of patients spend an average of more than one hour waiting to be seen by a doctor in a municipal polyclinic.

In the tactics of the Central Committee of the CPSU "On further improvement in organizing "socialist competitions," attention is given to the fact that there is still much to do in the nonindustrial area to improve the quality and standards of care. This applies in full measure to the operation of public health agencies and institutions, since not only the effectiveness of disease prevention and treatment but also the time spent by blue and white collar workers to receive medical care depend on the level of organization of their activity, while the psychological atmosphere prevailing in polyclinic and outpatient centers determines the emotional background against which the visitor will communicate with the medical worker or doctor. All this is particularly important in cities with a large industrial potential, where most of the adult population is at work during the day.

Article by I. P. Barskiy, Ye. I. Stolyan, Medical and Sanitary Center of Nevskoslovskiy District, Leningrad, Sovetskoye Zdravokhraneniye, Russia, No 9, 1972, submitted 5 April 1972, pp 16-19

REDUCTION OF TIME SPENT ON RECEIVING POLYCLINIC CARE

UDC: 362.121.008

(2)

1/2 033 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CERTAIN PROBLEMS PERTAINING TO THE ORGANIZATION OF THE WORK OF THE
SHOP PHYSICIAN AT A CHEMICAL ENTERPRISE -U-
AUTHOR--BARKSIY, I.P. B
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, SOVETSKOYE ZDRAVOOKHRARENIYE, RUSSIAN, NO 3, 1970, PP
39-43
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--INDUSTRIAL HYGIENE, PREVENTIVE MEDICINE, MEDICAL FACILITY,
CHEMICAL PLANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0718 STEP NO--UR/0753/70/000/003/0039/0043
CIRC ACCESSION NO--AP0132820
UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0132820

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ORGANIZATION OF THE ACTIVITY OF THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS AND FINDING THE MOST RATIONAL FORMS OF MEDICAL SERVICE TO WORKERS OF CHEMICAL ENTERPRISES ARE VERY URGENT PROBLEMS IN CONNECTION WITH INTRODUCTION IN THE LAST 10 YEARS OF A CONSIDERABLE NUMBER OF CHEMICAL PLANTS AND COMBINES AND WITH THE EXPANSION OF THE NUMBER OF POLYCLINICS AND OUT PATIENT CLINICS WHICH HAVE BEEN ORDERED TO ORGANIZE AND CONDUCT A COMPLEX SYSTEM OF THERAPEUTIC AND PREVENTIVE MEASURES AMONG THE COLLECTIVES OF THESE INDUSTRIAL FACILITIES.

UNCLASSIFIED

USSR

UDC 536.24

ANTONOV, I. N., SHEYNESSON, A. S., BARSKIY, M. L.

"Role of Radiant and Convective Components in the Heat Exchange of Radiometers"

V sb. Prikl. i teor. fizika. Vyp. 3 (Applied and Theoretical Physics. No. 3 -- Collection of Works), Alma-Ata, 1972, pp 257-262 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B914)

Translation: Methods, computational results and a comparative evaluation of the radiant, convective, and total coefficients of heat exchange of the surfaces of a radiometer of cylindrical shape are discussed. The results make it possible to determine the average heating of the instrument relative to the surrounding medium and to evaluate the role of radiant and convective components in the total balance of heat exchange under various meteorological conditions. Detailed quantitative characteristics are given. Authors' abstract.

1/1

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CUTTING OFF THYRISTOR DIRECT CURRENT TRANSFORMERS DURING INDUCTIVE
LOAD FEEDING -U-
AUTHOR-(02)-BARSKIY, V.A., MUSHKOVICH, B.I. *B*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, ELEKTROTEKHNIKA, 1970, NR 2 PP 11-14
DATE PUBLISHED--70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--THYRISTOR, ELECTRONIC TRANSFORMER, DIRECT CURRENT, ELECTRONIC
SWITCH, ELECTRONIC RECTIFIER, VOLT AMPERE CHARACTERISTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/1224 STEP NO--UR/0292/70/000/002/0011/0014
CIRC ACCESSION NO--AP0123188
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123188

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE PRESENTED FROM A THEORETICAL AND EXPERIMENTAL STUDY OF A REGIME WHICH IS FREQUENTLY MANIFESTED DURING THE PROCESS OF TRANSFORMER EXPLOITATION. IT IS SHOWN THAT OVERVOLTAGE AT SHUT OFF RECTIFIERS AND INDUCTIVE LOAD, WHICH ARE MANIFESTED DURING TRANSFORMER CUT OFF FROM THE SUPPLY NETWORK, ARE DETERMINED BY THE VOLTAGE DROP IN THE ARCS OF SWITCHING OFF APPARATUS. AN ANALYSIS IS GIVEN FROM THE EXPERIMENTAL STUDY OF THE VOLT AMPERE CHARACTERISTICS OF THE ARC OF A SWITCH AND THE RESULTING OVERVOLTAGE. SCHEMES FOR PROTECTION FROM OVERVOLTAGE ARE GIVEN FOR NONREVERSIBLE AND REVERSIBLE TRIPHASE AND NULL PHASE CIRCUITS FOR THE REGIME UNDER INVESTIGATION. AN ANALYSIS IS MADE OF THE PROCESSES WHICH TAKE PLACE IN THYRISTORS DURING INDUCTIVE LOAD SWITCH OFF, OVERHEATING OF THE STRUCTURE OF THE TERMINAL CONDUCTING THYRISTORS, AND THE MAXIMUM RATE OF CURRENT RISE IN SHUNTING THYRISTORS. ORIGINAL ARTICLE: FOUR ILLUSTRATIONS AND SEVEN BIBLIOGRAPHIC ENTRIES.

UNCLASSIFIED

USSR

UDC: 550.834

BEKLEMISHEV, A. B., BARSOV, V. V., All-Union Scientific Research Institute
of Geophysical Methods of Prospecting

"A Multichannel Device for Harmonic Analysis of Seismic Processes"

Moscow, Otkrytiya, Izobretaniya, Promyshlennyye Obrabotsy, Tovarnyye Znaki,
No 11, Apr 72, Author's Certificate No 333512, Division G, filed 8 Dec 69,
published 21 Mar 72, p 184

Translation: This Author's Certificate introduces a multichannel device for
harmonic analysis of seismic processes. The device contains signal re-
ceivers connected through amplifiers and filters to multipliers whose out-
puts are connected through integrators and an adder to a registration unit
and a time mark generator. As a distinguishing feature of the patent, the
effectiveness of analysis is improved by adding a signal generator with
continuously variable frequency connected in parallel with the registration
unit and with one of the inputs of each multiplier. The receiver for the
process to be studied is connected through an amplifier to the second input
of the photomultiplier.

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- 125 -

AA0052678-

BARSUKOV

A.A.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

244047 SAFETY VALVE WITH TRANSFER SLIDE-VALVE
controlled by the difference of pressure
in a throttled aperture made in the slide-valve
the fluid brought from the pressure cavity
simultaneously to the annular belt and to the face
of the slide valve, differing in having a conical
surface between two cylindrical surfaces on the
slide-valve, on which it is centred in the valve
body. This speeds up the operation and improves
reliability. When the pressure in cavity 13 is
below the setting of ball valve 4, there is no
flow of oil through throttling aperture 14, and the
pressure in cavities 6, 11 and 13 is equal, so the
oil pressure forces on slide-valve 2 are balanced
but the slide-valve is pressed down by spring 3,
and its conical surface 10 prevents oil passing
from pressure cavity 6 to drain cavity 7. Surface
10 may be made in bush 15 pressed into body 1. If
the pressure in the system is above the setting of

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19821447

18

AA0052678

Barsukov, A.A.: Kamenetskiy, G.I.: Eksperimental'nyy
Nauchno-Issledovatel'skiy Institut Metallorezhushchikh Stankov

valve 4, oil from cavity 6 begins to seep via
channels 12 into cavity 11 and via aperture 14
into cavity 13, whence it will drain via valve 4
and channel 16 to drain cavity 7. The pressure
in cavity 13 is lower than in cavities 6 and 11
as a result of loss of pressure in aperture 14.
The pressure acting on slide-valve 2 from cavities
6 and 11 is greater than that from cavity 13. The
slide-valve rises, allowing oil to drain.
22:12.62. 809893/25-8, BARSUKOV, A.A. and
KAMENETSKII, G.I. Metal-Cutting Lathes Inst.
(29.9.69) Bul. 17/14.5.69. Class 47g, Int. Cl.
F 06k.

2/2

MT

19821448

Acc. Nr:

AP0052061

Ref. Code: UR0396

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii imeni
S. S. Korsakova, 1970, Vol 70, Nr / ,
pp 40-43

CHANGES OF TISSUE RESPIRATION, THE CONTENT OF SULFHYDRYL GROUPS
AND FREE RADICALS IN THE BRAIN OF ANIMALS IN ANEMIZATION AND HY-
PERBARIC OXYGENATION

A. N. Leonov, A. A. Barsukov

The authors studied peculiarities of cellular respiration and of the content of SH-groups and free radicals in the great hemispheres of 350 nananesthetized rats following acute massive blood letting (2.8% of body weight) and after hyperbaric oxygenation (2 atmospheres for 40 minutes). Adaptation mechanisms particularly providing a high level of cellular respiration in the CNS and redox systems (realized through reactive links — SH-groups and free radicals) lie at the basis of the therapeutic effect produced by hyperbaric oxygenation in posthemorrhagic anemia.

REEL/FRAHE
19820599

1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--LATTICE PARAMETERS AND ELECTRICAL PROPERTIES OF GALLIUM ARSENIDE
BEFORE AND AFTER HEAT TREATMENT -U-
AUTHOR--(05)-KUZNETSOV, G.M., BARSUKOV, A.O., KANDYBA, G.I., VORONKOVA,
G.M., BULATOVA, O.S. *B*
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 7(3), 452-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--ELECTRIC PROPERTY, GALLIUM ARSENIDE, LATTICE PARAMETER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0843 STEP NO--UR/0363/70/006/003/0452/0456
CIRC ACCESSION NO--AP0118019
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--18OCT70

CIRC ACCESSION NO--AP0118019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE LATTICE PARAMETER OF UNDOPED GAAS ON CURRENT CARRIER CONC. WAS INVESTIGATED. A SHARP DECREASE IN THE LATTICE PARAMETER IN THE CONC. REGION OF (0.7-3) TIMES 10^{15} -CM $^{-3}$ WAS OBSD., WHICH IS ASSOCD. WITH AN INCREASE IN THE VACANCY CONC. BY 1.44 TIMES 10^{19} -CM $^{-3}$. BY MAKING USE OF THE PREVIOUSLY REPORTED DATA, THE AT. VOL. OF THE VACANCIES IN GAAS WAS DETD. IT IS 0.767 RELATIVE TO THE AV. VOL. OF THE ATOM, WHICH IS IN GOOD AGREEMENT WITH THE RESULTS OF THE D. MEASUREMENTS. THE DEPENDENCE OF THE LATTICE PARAMETER AND THE ELEC. PROPERTIES OF GAAS ON AS VAPOR PRESSURE, P SUBAS, DURING THE ANNEALING PROCESS WAS INVESTIGATED. AT P SUBAS GREATER THAN 2 ATM THERE IS OBSD. AN INCREASE IN THE LATTICE PARAMETER BY 1 TIMES 10^{19} PRIME NEGATIVE 4 ANGSTROM, CORRESPONDING TO THE DECREASE IN THE VACANCY CONC. BY 1 TIMES 10^{19} -CM $^{-3}$. THE CARRIER CONC. IN SAMPLES SUBJECTED TO ANNEALING AT 700DEGREES FOR 7 HR DEPENDS ON THE P SUBAS AND IT INCREASES WITH INCREASING P SUBAS. ANNEALING AT P SUBAS GREATER THAN 2 ATM LEADS ALSO TO A SYSTEMATIC INCREASE IN THE CARRIER MOBILITY (TO 25PERCENT). FACILITY: MOSK, INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INFRARED ABSORPTION SPECTRA OF 1,2,PROPYLENEDIAMINE COMPLEXES OF
THALLIUM,III -U-
AUTHOR--(04)-KULBA, F.YA., MAKASHEV, YU.A., MARKHAYEVA, D.M., BARSUKOV,
A.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 983-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--IR SPECTRUM, PROPYLENE, DIAMINE, THALLIUM COMPOUND, COMPLEX
COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1215 STEP NO--UR/0078/70/015/004/0983/0987
CIRC ACCESSION NO--AP0129633

UNCLASSIFIED

2/2 021

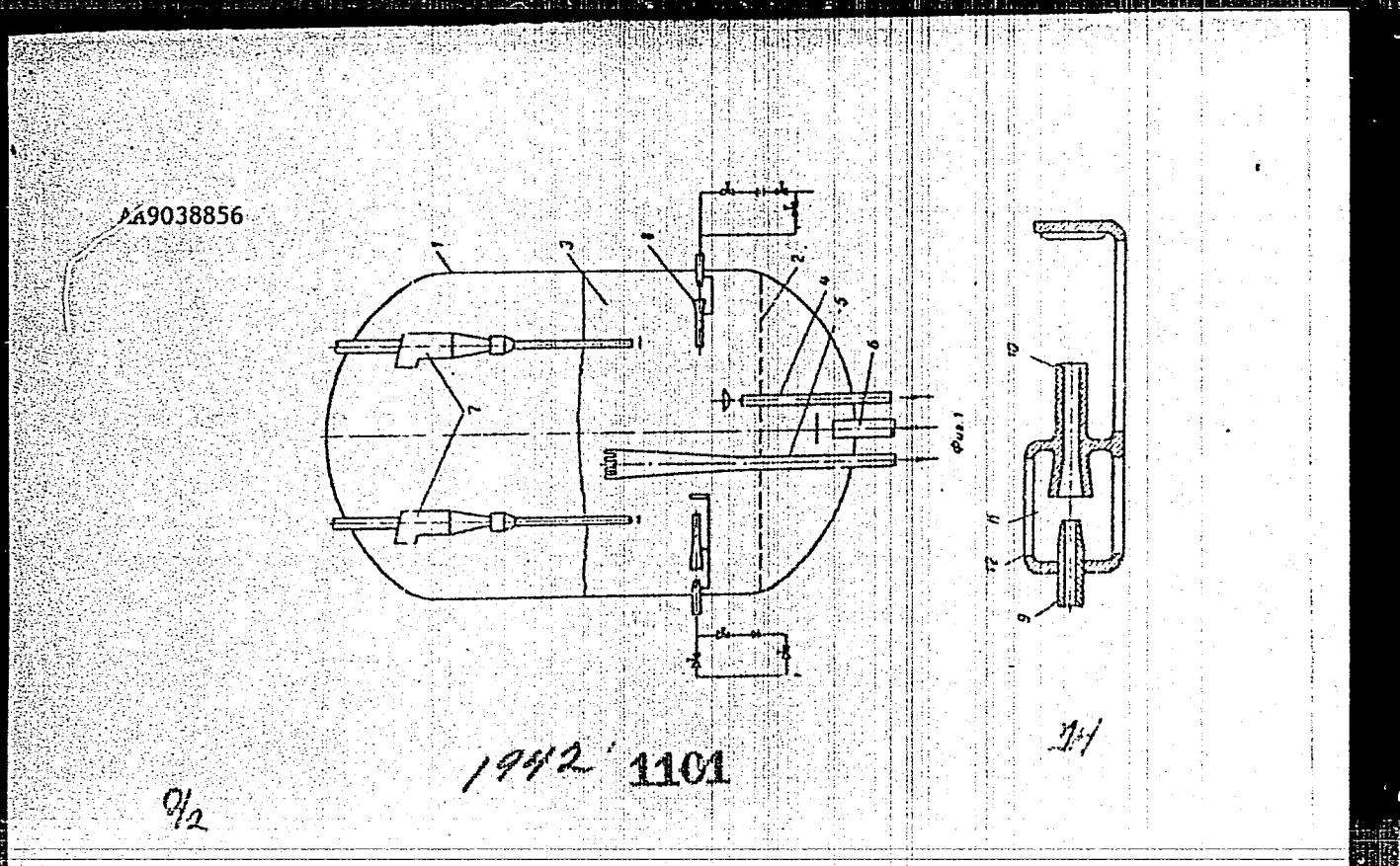
UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128633

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IR SPECTRA OF TL(PN) SUBN X SUB3 (WHERE PN EQUALS 1,2,PROPYLENEDIAMINE, N EQUALS 1, 2, OR 3, AND X EQUALS CL, BR), TI(PN) SUB2 I SUB3, AND TL(PN SUB3 (NO SUB3) SUB3 WERE DETD. AND ASSIGNMENT OF THEIR MAX. ARE GIVEN. SPECTRA OF (TL(PN) SUB3) PRIME3 POSITIVE ARE VERY SIMILAR TO THE SPECTRA OF ZN(EN) SUB3 CL SUB2 AND CD(EN) SUB3 CL SUB2; IT IS ASSUMED THAT IN THESE COMPLEXES, PN HAS THE GAUCHE CONFIGURATION. MONO AND BIS-PN COMPLEXES HAVE SIMPLER SPECTRA OWING TO CHAINLIKE STRUCTURE WITH TRANS COORDINATED PN BRIDGES.

UNCLASSIFIED



USSR

UDC: 658.562.533

LEVIN, G. I., SHLYAGA, G. I., BARSUKOV, G. Ye.

"A Device for Automatic Monitoring of Operations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331393, Division G, filed 22 Dec 69, published 7 Mar 72, p 154

Translation: This Author's Certificate introduces: 1. A device for automatic monitoring of operations given by a time schedule. The device contains a display unit and a control unit which is connected to the inputs of a decoder, elapsed time indicator, printout module, and attached printer, and also to the controlling input of a shift register. As a distinguishing feature of the patent, the visibility and efficacy of monitoring are improved by adding a time interval distributor, a module for determining deviations, a module for visualizing the schedule to be monitored, and a module for output of deviations. The inputs of the module for determining deviations are connected to the outputs of the module for visualizing the schedule to be monitored, the decoder, and the time interval distributor. The outputs of the module for determining deviations are connected through the module

1/2

USSR

LEVIN, G. I. et al., USSR Author's Certificate No 331393

for output of deviations to one of the inputs of the indicator and of the printout module. The controlling input of the module for output of deviations is connected to the controlling output of the time interval distributor whose second output is connected to the controlling input of the display unit, while the input of the time interval distributor is connected to the output of the elapsed time indicator. 2. A modification of this device distinguished by the fact that the module for determining deviations contains coincidence circuits which are connected by their two inputs in the diagonal of a matrix whose vertical lines are connected to the outputs of the corresponding delay elements, while the horizontal lines are connected through NOT gates to the corresponding memory elements. The outputs of the delay elements are connected through an OR logic gate to the set terminals of the memory elements.

2/2

- 3 -

USSR

UDC: 531.767:629.13.014.34.69

DOBROLYUBOV, N. V., BARSUKOV, I. I., KLIMOV, I. T., URMANCHEYEV, S. A.

"A Device for Converting Small Air Speeds to an Electric Signal"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 279213, Class 42, filed 2 Apr 69, p 143

Abstract: This Author's Certificate introduces a device for converting small air speeds to an electric signal, designed chiefly for helicopters. The installation contains a pressure pickup mounted on a blade of the helicopter rotor, and a pressure differential pickup. As a distinguishing feature of the patent, the construction is simplified and the reliability of the device is improved by installing an air collector in the hollow shaft of the rotor. This air collector connects the pressure pickup mounted on the rotor blade to the pressure differential pickup.

1/1

USSR

UDC 621.372.827

BARSUKOV, K.A., GAZAZYAN, E.D., LAZIYEV, E.M.

"On The Theory Of Transition Radiation In A Waveguide"

Izv. VUZ: Radiofizika, Vol XV, No 2, Feb 1972, pp 191-195

Abstract: The transition radiation of a particle crossing a regular waveguide perpendicular to its axis is considered. The waveguide is filled by a dielectric with a constant ϵ . Expressions are derived for the fields and radiation intensity. With $\epsilon = 1$, it is possible that Vavilov-Cerenkov radiation can also originate together with transition radiation. The properties of this radiation are considered for the comparatively simple case of a rectangular waveguide. The conditions are obtained which determine the spectrum of the Vavilov-Cerenkov radiation, and the threshold values of the velocity and the dielectric constant for this radiation are established. 5 ref. Received by editors, 4 June 1971.

1/1

- 213 -

USSR

UDC 621.372.827

BARSUKOV, K. A., GAZAZYAN, E. D., LAZIYEV, E. M.

"Theory of Transition Radiation in a Wave Guide"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 191-195

Abstract: Transition radiation in wave guides has been studied in a number of papers [K. A. Barsukov, ZhETF, No 37, 1106, 1959; ZhTF, No 32, 161, 1962] in which a study was made of the characteristic features of this radiation on movement of a charge parallel to the wave guide axis. The experimental difficulties encountered in that research in connection with the narrow band nature of the wave transformers and separation of the beam and radiation can be excluded by moving the beam in the transverse direction to the wave guide axis. A theory of this phenomenon is proposed here for a regular wave guide filled with dielectric with a dielectric constant ϵ . Expressions are obtained for the radiation fields and intensity. A study was made of the properties of the radiation in the example of a rectangular wave guide, and the conditions determining the Vavilov-Cerenkov radiation spectrum were obtained. Expressions are derived for the Cerenkov radiation energy.

1/1

- 130 -

172 007 UNCLASSIFIED PROCESSING DATE--2/NOV/0
TITLE--COMPLEXES OF MACHINES OF CONTINUOUS ACTION -U-
AUTHOR--(05)-TARTAKOVSKIY, B.N., AKUTIN, G.K., BARSUKOV, M.I., SHCHERBINA,
YU.M., OSTROUKHOV, I.I.
COUNTRY OF INFO--USSR
SOURCE--COMPLEXES OF MACHINES OF CONTINUOUS ACTION (KOMPLEKSY MASHIN
NEPRERYVNOGO DEYSTVIYA) MOSCOW, NEDRA, 1970, 123 PP
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--MINING ENGINEERING, MINERAL DEPOSIT, INDUSTRIAL AUTOMATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3003/1735 STEP NO--UR/0000/70/000/000/0001/0123
CIRC ACCESSION NO--AM0130587
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AM0130587

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. TABLE OF CONTENTS: PREFACE 5.
CHAPTER I. MECHANIZATION OF STRIPPING OPERATIONS IN OPEN CUT MINES 12.
II. MECHANIZATION OF MINE CONSTRUCTION OPERATIONS IN OPEN CUT MINES 36.
USE OF CONTINUOUS OPERATION TECHNIQUES 70. CONCLUSION 125.

BIBLIOGRAPHY 126. THE BOOK DEALS WITH BASIC MOST TYPICAL FLOW SHEETS
IN MECHANIZATION OF STRIPPING AND MINE CONSTRUCTION OPERATIONS IN OPEN
CUT MINES BY MEANS OF COMPELXES OF CONTINUOUS OPERATION MACHINES, AS
WELL AS FUNDAMENTAL PRINCIPLES IN AUTOMATION OF THESE COMPLEXES. THE
BOOK WAS WRITTEN FOR A WIDE CIRCLE OF ENGINEERING TECHNICAL PERSONNEL OF
MINING ENTERPRISES, DESIGN AND SCIENTIFIC RESEARCH ORGANIZATONS; IT CAN
BE USEFUL ALSO TO COLLEGE STUDENTS SPECIALIZING IN THE FIELD OF OPEN CUT
MINING DEPOSITS.

UNCLASSIFIED

USSR

UDC 616-005.1-036.11-085.835.35-07:616.127-008.9

LEONOV, A. N. and BARSUKOV, V. A., Department of Pathological Physiology, Voronezh Medical Institute, and Laboratory of Chemical Physics, Voronezh University

"Some Characteristics of Metabolism in the Myocardium After Acute Blood Loss Under Conditions of Hyperbaric Oxygenation"

Moscow, Kardiologiya, No 5, 1971, pp 140-142

Abstract: Rats were bled for 30 minutes (2.8% of the body weight) and then exposed to hyperbaric oxygen (2 atm) in a pressure chamber for 40 minutes. The intensity of tissue respiration decreased sharply one hour after bleeding (agonal stage). However, hyperbaric oxygenation not only prevented the depression of tissue respiration in the agonal stage but restored the normal level of oxygen consumption. The quantity of free sulfhydryl groups in the myocardium changed only in the agonal stage when they increased substantially. But hyperbaric oxygenation prevented them from increasing, keeping them within normal limits. The content of free radicals in the myocardium of the experimental animals decreased, especially in the agonal stage. But hyperbaric oxygenation restored them to the level found in intact animals. More than

1/2

USSR

LEONOV, A. N. et al, Kardiologiya, No 5, 1971, pp 140-142

two-thirds of the treated animals survived and were indistinguishable from the controls with respect to motor activity. All the untreated animals died within one hour of the start of bleeding.

2/2

- 71 -

USSR

B UDC 616.831-008.9-02:616.831-005.4+615.835.3

LEONOV, A. N. and BARSUKOV, V. A., Voronezh Medical Institute

"Changes in Tissue Respiration and Content of Sulfhydryl Groups and Free Radicals in the Brains of Animals After Exsanguination and Hyperbaric Oxygenation"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1970, pp 40-43

Abstract: Exsanguination of rats (2.8% of body weight) intensified tissue respiration, increased the number of sulfhydryl groups, and decreased the content of free radicals in the animal's brains. Hyperbaric oxygenation (2 atm for 40 min) enabled about 70% of the exsanguinated rats to survive, whereas all the untreated animals died within an hour. The therapeutic effect of hyperbaric oxygenation is attributed to its ability to ensure a high level of tissue respiration in the central nervous system, reduce the number of sulfhydryl groups, and slightly increase the content of free radicals. These characteristics of CNS metabolism are a manifestation of intracellular compensation mechanisms.

1/1

Acc. Nr.

APO036350

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code

UR 0007

69111r Solubility of hydrated tin oxide complexes and cassiterite crystallization under hydrothermal conditions. Kuril'-chikova, G. E.; Barsukov, V. I. (V.I. Vernadskii Inst. Geochem. Anal. Chem., Moscow, USSR). *Geokhimiya* 1970, (1), 35-42 (Russ). The soly. of Sn(IV) hydroxide in KOH and NaOH solns. depending on the pH at 100, 200 and 300° has been studied. The soly. decrease with temp. rise (up to 2×10^{-5} mole/l. Sn) is accompanied by a change of the compn. of the solid phase which at 100° corresponds to varlamoffite, $\text{SnO}_2 \cdot x\text{H}_2\text{O}$ and at 300° to cassiterite, SnO_2 . By the method of soly. the complexing in the systems $\text{Sn}(\text{OH})_4$ -KOH- H_2O and $\text{Sn}(\text{OH})_4$ -NaOH- H_2O at 100° has been investigated. Neutral and alk. solutions (pH 7-11) complexes $\text{Sn}(\text{OH})_4^{4-}$ are formed. Stability const. β_{10} of these complexes: $\beta_{10} = 5.0 \times 10^{16}$, $\beta_{20} = 2.6 \times 10^{21}$, $\beta_{30} = 4.0 \times 10^{26}$, $\beta_{40} = 4.1 \times 10^{37}$, have been calcd. as well as the const. of their hydrolysis: $K_{10} = 2.9 \times 10^{-8}$, $K_{20} = 8.7 \times 10^{-10}$, $K_{30} = 5.7 \times 10^{-10}$. BLJR

REEL/FRAME

19721188

USSR

UDC 669.71:620.187

FRIDLYANDER, I.N., BARSUKOV, V.N., STEPANOVA, M.G., and SMIRNOVA, I.N., All-Union Scientific Research Institute of Aviation Materials

"Study of the Fine Structure and Recrystallization of SAP-1 Sheets"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 7, 1971, pp 13-15

Abstract: The fine structure of a powder, as well as the structure and texture of SAP-1 sheet (Sintered Aluminum Powder) were studied. The zone of coherent scattering and the magnitude of microdeformations were determined by the method of harmonic analysis of the Roentgen (111) line and (222) matrix shapes. With increasing degree of deformation the magnitude of the coherent scattering zone of cold rolled sheets (7.8% Al_2O_3) increases and this is related to the heating of the material in rolling. It follows from this that not only the distance between oxide particles, but also the magnitude of aluminum matrix blocks affect positively the strength properties of SAP-1 sheets. The results of a study of the advantageous orientation of sheets, deformed at 80% and annealed at 250-630°C with aging from 15 min to 10 hours are presented.

1/1

USSR

UDC 621.355.8.035.2

ANTONENKO, P. A., ~~BARSUKOV, V. Z.~~, KRAPIVNYI, N. G., SAGOYAN, L. N.

"Study of a Cermet Nickel-Nickel Oxide Electrode. Report I. Structural Characteristics of the Electrode"

Khim. tekhnologiya. Resp. mezhved. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), No 24, pp 96-98 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L265)

Translation: A study was made of a cermet nickel-nickel oxide electrode of an alkaline storage battery comprising two porous phases. The dependence of the effective porosity of the base of the electrode on the amount of filler and its thickness was investigated. It was established that with the existing technological process of depositing $\text{Ni}(\text{OH})_2$ in the pores of the base, the latter occupies only 57% of the pore space.

1/1

USSR

UDC 621.355.6.035.4

ANTONENKO, P. A., BARSUKOV, V. Z., SAGOYAN, L. N.

"Study of the Conductivity of Electrolytes used in Alkaline Batteries"

Khim. tekhnologiya. Resp. mezhved. temat. nauch.-tekhn. sb. (Chemical Technology. Republic Interdepartmental Thematic Scientific and Technical Collection), 1971, vyp. 23, pp 42-44 (from RZn-Khimiya, No 6 (II), Jun 72, Abstract No 6L246)

Translation: An experimental test was run on the colloid-liquid compound method for measuring the conductivity of solutions of strong electrolytes to DC current. The results obtained when investigating the conductivity of KOH, NaOH, LiOH and KOH+LiOH solutions in a broad temperature and concentration range agree well with the published data.

1/1

- 13 -

USSR

UDC 621.35.035.2.001.2

ANTONENKO, P. A., BARSUKOV, V. Z., CAGOYAN, L. N.

"Calculation of Dynamic Characteristics of 3-Phase Liquid Non-Lamellate Electrodes"

K Raschetu Dinamicheskikh Kharakteristik Trekhfaznykh Zhidkostnykh Bezlamel'nykh Elektrodiv, Moscow, 1971, 10 pages. (Translated from Referativnyy Zhurnal Khimiya, No 4, Moscow, 1972, Abstract No 4L226 Dep by the authors).

Translation: A method is studied allowing a significant reduction in the number of dynamic characteristics of charging (discharging) of a 3-phase liquid non-lamellate electrode which must be calculated. It is established that the dynamic characteristics of electrodes of various thicknesses are similar at identical temperature. In connection with this, it is sufficient to calculate only one dynamic characteristic, from which a transition can be made to an arbitrary version of the electrode by changing the scales along the coordinate axes. Relationships are presented for calculation of the internal resistance of an electrode and the energy losses on the electrode during the discharge process. The use of elements of the theory of similarity allows the time expenditure to be reduced, while improving the clarity and generality of the results and allowing studies to be performed in analytic form.

1/1

USSR

UDC 547.26.118.07

SHAROV, V. N., KLEBANSKIY, A. L., BARTASHEV, V. A., VALYASNIKOVA, T. D., GRINBLAT, M. P., SOKOLOV, YE. I., TSERRETELI, I. YU.

"A Method of Producing Organofluoride Cyclic Esters of Alkyl (aryl)phosphonic Acids"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, 1970, Author's Certificate No 270732, filed 25 Mar 69, p 23

Abstract: This Author's Certificate introduces a method of producing organofluoride cyclic esters of alkyl(aryl)phosphonic acids. As a distinguishing feature of the patent, alkyl(aryl)dihalophosphonates are interacted with polyfluoroalkylene glycols in the presence of a tertiary amine in an inert solvent.

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USSR

UDC 546.185+547.241

SHAROV, V. N., KLEBANSKIY, A. L., ~~BARTASHEV, V. A.~~ (DECEASED),
All-Union Scientific Research Institute of Synthetic Rubber imeni
S. V. Lebedev, Leningrad, State Committee for Chemistry USSR

"Synthesis of Cyclic (Polyfluoro)alkylene (polyfluoro)alkylphosphates
and (Polyfluoro)Alkylenealkyl(aryl)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 2011-2014

Abstract: A solution 1,1-dihydrotrifluoroethanol in ether was
added to phosphorus oxychloride in ether and allowed to stand over-
night. The solids were they filtered off, the solvent evaporated
and 1,1-dihydrotrifluoroethyldichlorophosphate was distilled. 1,1-
Dihydropentafluoropropyl-, 1,1-dihydroheptafluorobutyl-, 1,1-di-
hydrononafluoroamyl-, 1,1-dihydro-3-(trifluoromethoxy)-tetra-
fluoropropyl- and 1,1,3-trihydrotetrafluoropropyldichlorophosphates
were obtained analogously. To obtain 3,3,3-trifluoropropyldi-
chlorophosphine (I), 3,3,3-trifluoropropylmagnesium chloride was
first converted to the corresponding cadmium reagent and then
1/2

- 92 -

USSR

SHAROV, V. N., et al, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70, pp 2011-2014

reacted with phosphorus trichloride. The product (I) boiled at 120-122°, d_4^{20} 1.4514, n_D^{20} 1.4290; it was converted to the 3,3,3-trifluoropropylidichlorophosphonate by treatment with chlorine followed by SO_2 . The synthesis of 1,1,5,5-tetrahydrohexafluoroamylenechlorophosphate consisted of reacting phosphorus oxychloride with 1,1,5,5-tetrahydroxyfluoroamylene glycol and triethylamine. The additions were carried out in cold ether and the reaction mixture was allowed to come to room temperature and stand overnight. The solution was cooled again and treated with gaseous HCl. The precipitate was filtered and washed with ether and the product was vacuum-distilled. 1,1,5,5-Tetrahydrohexafluoroamylene-1,1-dihydro-trifluoroethylphosphate -pentafluoropropylphosphate, -heptafluorobutylphosphate, nonafluoroamylphosphate and -3-(trifluoromethoxy)-tetrafluoropropylphosphate were obtained analogously. Physical properties of the products are tabulated in the article.

2/2

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SEDIMENTATION ANALYSIS OF OIL HYDRATION DEPOSITS -U-
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FRACTIONAL COMPN. OF THE HYDRATION PPT. IS NOT CONST. AND DEPENDS ON THE QUALITY OF THE OIL AND METHOD OF HYDRATION. THE RADIUS OF THE PPTD. PARTICLES IS 0.023-0.006 CM. AND THE RATE OF SETTLING IS 0.9-0.06 M-HR. TREATMENT OF OIL WITH 20PERCENT NACL AFTER HYDRATION INCREASES RATE OF PPTN. 1.5-2 TIMES. THE AMT. OF LARGE PARTICLES OBTAINED BY THIS TREATMENT INCREASES 1.1-2.0 TIMES.

FACILITY: GOMEL, ZHIR. KOMB., GOMEL, USSR.

UNCLASSIFIED

BARTASHEVICH, V.

MEDICINE

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22 OCT 71

UDC: 616-006.6-092.9-018.1-076.4

ULTRASTRUCTURAL DISTINCTIONS OF CANCER CELLS FOLLOWING IONOPHORESIS

[Article by G. Godlevsky ^{ac} V. Bartashevich ^{ac}, Institute of Pharmacology and Institute of Oncology, Warsaw; ~~Godlevsky, V. Bartashevich~~, ~~Institute of Pharmacology and Institute of Oncology, Warsaw~~, ~~USSR~~, ~~Academy of Medical Sciences USSR~~, Russian, No 8, 1971, pp 39-42]

In our preceding investigation (Godlevsky and Penar) a study was made of changes developing under the effect of ionophoresis in a transferable Guerin ["Geren"] tumor, which consisted of breaking up of the part of the tumor close to the cathode, formation of a "discharge line" between the positive and negative electric fields and consolidation of the anode segment of the neoplasm; this study was pursued using a light microscope. For subsequent investigation of this problem an electron microscope was used.

After ionophoresis, small pieces of tumor were excised on the side of the anode and cathode. These fragments were fixed in 1% osmium tetroxide solution (pH: 7.4) or 5% glutaric aldehyde solution in a phosphate buffer (pH: 7.2). The fragments of tumor tissue fixed in glutaric aldehyde were additionally fixed in 1% osmium tetroxide solution after several elutions in a cacodyl buffer (pH: 7.2). The material was dehydrated with ascending concentrations of ethanol and imbedded in Epon-812. One micron sections stained with toluidine blue were used for light microscopy. Ultrafine sections were additionally stained with uranyl acetate and lead citrate, then examined under a JEM-7A* electron microscope. Sections of transferable tumors that were not submitted to ionophoresis served as control material.

Figure 1 shows the electron microscopic picture of fragments of two tumor cells from control material. The tumor cells are spindle shaped, and the nuclei present numerous concavities. The nuclear chromatin is located mainly on the periphery of the nucleus and is characterized by considerable electron density. In the central part of the nucleus there are numerous, irregularly shaped electron dense nucleoli. In the cytoplasm are seen mitochondria, as well as outlines of rough endoplasmic reticulum and ribosomes, which lie freely or in small accumulations.

*The authors wish to thank Professor V. Kislyarskiy for allowing us to take photographs.

USSR

UDC: 621.372.8

BARTASHEVSKIY, Ye. L., PRIVALOV, Ye. N., SKUBITSKIY, V. N.

"Calculation of Waveguides With Cross Sectional Irregularity"

Kiev, Radioelektronika, Vol 15, No 7, Jul 72, pp 839-841

Abstract: Formulas are derived for calculating irregular waveguides with nonhomogeneity in both the transverse and longitudinal cross section. The procedure is based on Fourier series representation of the piecewise-constant functions of permittivity and permeability, taking a rectangular waveguide as an example. The results are compared with exact solutions for two cases: with a dielectric plate 1) near the wall, and 2) in the center of the waveguide. It is found that agreement is better for the second case.

1/1